

Cardiovascular interaction of acute alcohol consumption with soft drinks (alcopops)

Summary

Background. Alcohol consumption is frequent in social festive events. Consumption of premixed soft drinks with alcohol (**alcopops**) is found with increased occurrence among young people, especially women, during weekend celebrations. However, although acute ingestion of alcohol is often accompanied by episodes of cardiovascular dysregulation, malaise and even syncope, the full hemodynamic characterization of alcohol ingestion *with concomitant intake of sugars* as well as the mechanisms for the propensity to orthostatic intolerance are not well established.

Hypothesis and Aims. The purpose of the studies outlined in the current proposal is to evaluate the *interaction* of alcohol consumption with sugary drinks in healthy young male and female subjects. The *working hypothesis is that the vasodilatory properties of alcohol and the alcohol-induced autonomic impairment are potentiated by the concomitant ingestion of sugary drinks* in young people who abuse of alcopops, and thus that the *combination of sugary drinks with alcohol will increase orthostatic intolerance.*

Project. Cardiovascular and metabolic effects of mixing soft drinks and alcohol (alcopops)

In a randomized crossover design, we will monitor in young male and female healthy subjects, blood pressure (on a beat-to-beat basis), heart rate, cardiac output and cutaneous blood flow. After a stable baseline recording, the subjects will ingest on separate days one of the following four drinks containing: **(a)** 60 g **sucrose**; **(b)** **vodka** 40% by volume (at 1.6 mL/kg body weight, providing 0.5 g alcohol/kg); **(c)** 60 g **sucrose** + **vodka** 40% (at 0.5 g alcohol/kg); **(d)** **water**. All solutions are brought to a total volume of 500 mL with distilled water. Hemodynamic monitoring will continue for another 2 hours. An **orthostatic test** (consisting of active standing from the sitting position, during 10 min) will be performed at 1 and 2 hours after ingestion of the drink.

Significance. Acute alcohol consumption associated with sugary drinks (alcopops) is a relatively common occurrence in festive celebrations. A study of the interaction between sugar and alcohol will provide a better understanding of the mechanisms of cardiovascular dysregulation and useful insights for a better prevention of cardiovascular complications during those periods of festive excess.

Keywords: soft drinks, alcohol, alcopops, orthostatic intolerance